

## **REMARKS**

### **The Pending Claims**

Claims 1-48 are pending and under active consideration. The claims describe a waveguide for detecting light scattering particles, a method for detecting an analyte using light scattering particles and an apparatus that comprises the waveguide, an illuminating system and a scattered light detection system.

### **The Office Action**

Claims 1-48 are rejected.

Claims 1-13, 15-21, and 23-40 are rejected under 35 U.S.C. § 102(b) as being anticipated by Stimpson et al. (US 5,843,651).

Claims 2, 41, and 43-48 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Stimpson et al.

Claims 14 and 42 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Stimpson et al. as applied to claim 1, 41 above, and further in view of Evans (US 6,775,427).

### **Amendments**

No claims have been canceled, added or amended.

### **Summary of the Interview with the Examiner**

A telephone interview was conducted between Examiner Ellen Kim of the United States Patent and Trademark Office and Applicant's representative, Joel Silver. Discussed during the interview were the current rejections to claims 1-48 in the Office Action mailed on August 31, 2006.

Applicants contended that the current rejection based on Stimpson was improper. Particularly, Applicants asserted that Stimpson describes a waveguide in which the "second material" (i.e. material in which the particles are distributed) has a refractive index that is less than the refractive index of the material with which it interfaces. Conversely, the present claims are directed to a waveguide wherein the particles are distributed in a material that has a refractive index that is greater than or equal to the material with which it interfaces. Accordingly, Stimpson taught a much different waveguide as provided in the present claims. The Examiner agreed with Applicant's contentions and requested that Applicants submit a written response, which has been done in the following section of this paper. Upon submission of this response, the Examiner indicated that the finality of the current rejection would be withdrawn and a subsequent action or allowance would follow.

Applicants would like to sincerely thank Examiner Kim for her time and efforts in discussing the issues presented in the Official Action.

### **Response to Rejections**

#### **35 U.S.C. 102(b) Rejection**

Claims 1-13, 15-21, and 23-40 are rejected under 35 U.S.C. § 102(b) as being anticipated by Stimpson et al. (US 5,843,651). Applicants respectfully traverse this rejection.

The present claims are drawn to a waveguide comprising a first optically transmissive material that forms an interface with a second optically transmissive material, wherein the refractive index of said second material is greater than or equal to the refractive index of said first material, and one or more populations of scattered light detectable particles of a dimension between about 1 and about 500 nm inclusive that are bound to an analyte, wherein said particles are distributed in said second material such that said particles are illuminated by non-evanescent light and produce detectable scattered light in said waveguide.

Stimpson requires that “the refractive index of the waveguide must be greater than the refractive index of the sample fluid, as is known in the art for effecting total internal reflectance. For an aqueous sample solution, the refractive index,  $n$ , is about 1.33, so the waveguide typically has a refractive index of greater than 1.35, usually 1.5 or more.” Column 8, lines 41-49.

In other words, the “second material” (i.e. material in which the particles are distributed) in Stimpson must have a refractive index that is less than the refractive index of the material with which it interfaces. Conversely, the present claims are directed to a waveguide wherein the particles are distributed in a material that has a refractive index that is greater than or equal to the material with which it interfaces. Accordingly, the waveguide described in Stimpson *et al.* is clearly different from the presently claimed invention.

The final Office Action “notes that Stimpson *et al.* clearly teach at column 9, lines 10-20 that the light scattering particles are disposed across the entire waveguide. Therefore, the particles are clearly distributed in the second material, which has a greater refractive index as Applicant claims in the claim.” Applicants respectfully point out that in column 9, lines 10-20, Stimpson is describing simultaneous monitoring of light scattering events, not distribution of light scattering particles. Monitoring of light across a waveguide is much different than distributing particles into it.

Accordingly, Stimpson *et al.* does not teach or suggest all of the elements of the claimed invention and therefore is not anticipatory under 35 U.S.C. § 102(b). In view of the above remarks, withdrawal of all rejections over Stimpson *et al.* under 35 U.S.C. § 102(b) is respectfully requested.

#### 35 U.S.C. § 103(a) Rejection

Claims 2, 41, and 43-48 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Stimpson *et al.* Claims 14 and 42 are also rejected under 35 U.S.C. § 103(a) as being unpatentable over Stimpson *et al.* as applied to claim 1, 41 above, and further in view of Evans (US 6,775,427). Applicants respectfully traverse this rejection.

As mentioned above, Stimpson *et al.* describes a waveguide in which the sample is distributed in a material that has a refractive index that is less than the refractive index of the material with which it interfaces. Conversely, the present claims are directed to a waveguide wherein the particles are distributed in a material that has a refractive index that is greater than or equal to the material with which it interfaces. Accordingly, Stimpson *et al.* fails to teach all of the claim limitations as required to establish a *prima facie* case of obviousness.

Furthermore, Stimpson et al. does not provide a reasonable expectation of success or any motivation to modify the sample medium and material with which it interfaces such that the refractive index relationship between the two is reversed. In fact, by stating that the refractive index relationship between materials must be that way, as is in known in the art, Stimpson clearly teaches away from the present invention. Furthermore, nowhere in Evans nor any other cited reference is there motivation to alter what must be present in the waveguide of Stimpson.

Accordingly, Applicants respectfully submit that the obviousness rejections over Stimpson *per se* and in view of Evans are improper and should be withdrawn.

**CONCLUSION**

In view of the above remarks, it is submitted that this application is now ready for allowance. Early notice to this effect is solicited. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned agent at (541) 335-0165.

Respectfully submitted,

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/Joel Silver/  
Joel Silver  
Reg. No. 53,866

Molecular Probes, Inc. (a wholly owned subsidiary of Invitrogen Corp.)  
29851 Willow Creek Rd.  
Eugene, Oregon, 97402  
Phone: (541) 335-0165  
Facsimile: (541) 335-0354